REMARKS/ARGUMENTS

Claims 2-10 and 12-27 are now pending.

Independent claims 12 and 21 have been amended to specify that a data connection is a previously established data connection. Dependent claims 3, 8 and 13 have been amended to accord with the amendments of claim 12. Dependent claims 5 and 27 have been amended to correct typographical errors.

35 U.S.C. §102(e) rejections

The Examiner rejected claims 2-6, 9, 10, 12-16, 18 and 21-27 as being anticipated by U.S. Patent No. 6,501,947 to Hunzinger.

Applicant respectfully submits that Hunzinger does not teach every aspect, either explicitly or impliedly, of the invention as defined in amended claims 12 and 21, and their respective dependent claims. In particular, Hunzinger does not teach or suggest any procedure for determining if a previously established data connection has been lost, or for reestablishing the previously established data connection if it has been lost, nor does Hunzinger teach or suggest that such determinations be carried out at minimum fixed intervals.

Amended independent claim 12 reads:

A method of automatically maintaining a previously established data connection on a wireless data network, comprising:

determining, at minimum fixed time intervals determined by a service check timer, the status of the previously established data connection;

automatically transmitting a connection request if the previously established data connection is determined to be lost; and

re-establishing the previously established data connection if the transmitted connection request is accepted by the wireless data network

[emphasis added].

Further, amended independent claim 21 reads:

*A mobile device for establishing and maintaining a data connection to a
wireless data network, the mobile device comprising:*

*a back off timer for timing a back off period between retries
to establish the data connection;*

*a service check timer for setting a minimum fixed interval
after which a previously established data connection is checked to
determine if it has been lost; and*

*a connection manager for determining if the previously established
data connection between the mobile device and the wireless network exists
or has been lost; for resetting the service check timer upon its expiry if the
data connection exists; for transmitting connection requests to the
wireless network upon initialization, upon expiry of the back off timer, and
upon expiry of the service check timer if the previously established data
connection has been lost; and for resetting the back off timer in response
to receipt of a connection rejection from the wireless network* [emphasis
added].

The currently amended claims clearly recite that the data connection is reestablished
only if a previously established data connection has been lost. Applicant submits that the
meaning of *previously established data connection* clearly implies that an initial connection
was made otherwise there simply could not be such a previously established data connection.
Support for the amendments of claims 12 and 21 can be found at least in Fig. 3 and at page 7,
lines 14 - 27.

In the reasons given at page 9 of the Office Action, the Examiner states that Hunzinger
teaches determining if a connection has been lost and quotes from column 2, lines 22-29 for
support. Applicant respectfully disagrees with the characterization of the excerpt. What is
stated at column 2, lines 22-29 is:

Another aspect of the present invention is a timer setting circuit for use in

a mobile communication system. The timer setting circuit comprises a

reconnection timer and a timer setting circuit. The timer setting circuit

sets the reconnection timer to a value after a failed connection attempt

between a mobile station and the mobile communication system. The timer

setting circuit determines the value of the reconnection timer is based on a

set of data regarding connection requests[emphasis added].

It is clear from this excerpt that the reconnection timer of Hunzinger is a timer having a
time value set by a timer setting circuit after a failed connection attempt. The operation of the
reconnection timer is described at least at Fig. 2 and its related text at column 4, lines 8-27:

FIG. 2 illustrates the process 200 used by a mobile station 106 under the

current CDMA standard after an initial attempt to connect has failed. The

process 200 begins at a start state 205. Proceeding to state 210, the

mobile station 106 [shown in Fig. 1] *initializes a reconnect timer and*

waits for the time out. Under the IS-707 standard, the timer is initialized

at approximately four seconds. After the timer has elapsed, the process

200 proceeds to state 215 and again attempts to connect to the base

station 104.

Proceeding to state 220, the mobile station 106 determines whether

service with the base station 104 has been connected or rejected, or if the

mobile station 106 was unable to communicate with the base station 104.

If the connection with the base station 104 is successful, the mobile station

106 proceeds along the YES branch and the connection process terminates

in end state 250. Returning to state 220, if the connection with the base

station 104 is unsuccessful, the mobile station 106 proceeds along the NO

branch to state 225 where the mobile station 106 determines whether the

timer is at the maximum allowable value.

Thus, in relation to Fig. 2 and its related text, Hunzinger describes how a <u>connection attempt</u> is made (step 215) and how <u>connection re-attempts are made if the initial attempt to connect is rejected</u> (steps 225 to 245). Hunzinger does not teach or suggest, either in Fig. 2 or anywhere else in the description, how to determine if <u>a previously established connection has been lost</u>. In fact, Fig. 2 shows that when the connection attempt is successful, the connection process ends ("yes" branch going directly from step 220 to step 250), i.e., <u>there is no monitoring of any previously established connection</u> to determine if it has been lost.

The function of the reconnection timer of Hunzinger is thus markedly different from *determining, at minimum fixed time intervals determined by a service check timer, the status of the previously established data connection*, as recited in claim 12. Hunzinger's reconnection timer is also patentably different from the *service check timer for setting a minimum fixed interval after which a previously established data connection is checked to determine if it has been lost*, as recited in claim 21.

As stated in the previous response, Hunzinger discloses a CDMA standard process used by a mobile station to connect to a base station when an <u>initial attempt</u> to establish a connection has failed (col. 4, lines 1-10). This CDMA standard process (200) is illustrated in Fig. 2 and described at col. 4, line 8 to col. 5, line 21. When an initial connection attempt fails, the process 200 is initiated at step 205. Subsequent to this initiation, a reconnect timer is initialized (210) and, upon expiry of the reconnect timer, an attempt to reconnect is made at step 215. This attempt to reconnect includes a conditional loop at step 220 where, when an attempt to connect fails, a wait timer value is quadrupled up to a maximum value (steps 225 and 230) and a reconnection attempt is subsequently made (240). In Hunzinger, a determination of a data connection status is only made up to the point where the connection is established. Hunzinger states: "If the connection with the base station 104 is successful, the mobile station 106 proceeds along the YES branch and the connection process [200] terminates in end state 250" (col. 4, lines 21-23); however, <u>Hunzinger is silent as to any determination of the data connection status after the data connection is established</u>.

By contrast, the present invention provides an automatic disconnect recovery process that permits an always-on device to reestablish a data connection if the connection is lost. If a data connection is not established, a back off timer is initialized, and reconnection attempted (see e.g. p.10, line 6 - p.12, line 11; Fig. 3). However, if a data connection is established, the present invention checks periodically to determine if this previously established connection is still established or has been lost. A connection manager 156 checks the previously established data connection at minimum fixed intervals, as determined by a service check timer 154 (p. 7, lines 14 - 27; p. 12, lines 12 - 21; Fig. 4). If the previously established connection is determined to have been lost, the present invention attempts to re-establish the connection as described in relation to Fig. 3 (p. 9, lines 17 - 25), and may, if necessary, initialize the back off timer (p. 10, lines 6 - 12).

Therefore, Applicant submits that Hunzinger fails to teach or suggest all the limitations of independent claims 12 and 21, and their respective dependent claims 2-6, 9, 10, 13-16, 18 and 22-27. Withdrawal of the rejections under 35 U.S.C. §102(e) is respectfully requested.

35 U.S.C. §103(a) rejections

The Examiner rejected claims 7 and 8 as being obvious in view of Hunzinger and of U.S. Patent No. 4, 827,507 to Marry; claim 17 as being obvious in view of Hunzinger; claim 19 as being obvious in view of Hunzinger and an Official Notice; and claim 20 as being obvious in view of Hunzinger and of U.S. Publication No. 2002/0082032A1 to Hunzinger (Hunzinger II).

Each of claims 7, 8, 17 and 20 is dependent, directly or indirectly, from claim 12, and includes all the limitations of claim 12. Applicant reiterates the comments made above in respect of Hunzinger, and submits that, since Hunzinger does not teach all the claimed limitations of independent claim 12, it cannot teach or reasonably suggest all the limitations of a narrower claim dependent from claim 12. Applicant further submits that none of Marry, the Official Notice or Hunzinger II teach or suggest a service check timer that determines the

minimum fixed time intervals at which an established data connection is checked, as claimed herein.

Therefore, Applicant submits that there is no combination of the cited references that can teach or suggest all the claimed limitations in claims 7, 8, 17 or 20, and no showing of *prima facie* obviousness can be made. Withdrawal of the rejections under U.S.C. §103(a) is respectfully requested.

It is submitted that this application is now in condition for allowance, and action to that end is respectfully requested.

No fee is believed required. However, if a fee is due, the Commissioner is hereby authorized to charge any additional fees, and credit any overpayments to Deposit Account No. 501593, in the name of Borden Ladner Gervais LLP.

Respectfully submitted,
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